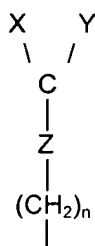


1. (Three Times Amended) A purified peptide consisting of about 21 or fewer amino acids, reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding an antigen recognized by autoimmune antibodies in a patient with rheumatoid arthritis, said mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

X is NH_2 , CH_3 , NHCH_3 or $\text{N}(\text{CH}_3)_2$; C.A. 10/10/04

Y is O , NH , NHCH_3 or $\text{N}(\text{CH}_3)_2$;

Z is O , NH or CH_2 ; and

n is 2, 3 or 4, on the condition that when $\text{X} = \text{NH}_2$ and $\text{Z} = \text{NH}$, Y is not NH .

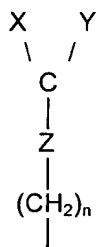
E2

4. (Five Times Amended) A peptide according to claim 1 wherein the peptide consists of a linear peptide selected from the group of peptides consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8 and SEQ ID NO:9.

E3

6. (Three Times Amended) A peptide according to claim 5 wherein the cyclic peptide consists of SEQ ID NO 10.

17. A purified peptide consisting of about 21 or fewer amino acids reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding a filaggrin or profilaggrin antigen, the mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

X is NH_2 , CH_3 , NHCH_3 or $\text{N}(\text{CH}_3)_2$;

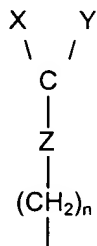
Y is O, NH, NHCH_3 or $\text{N}(\text{CH}_3)_2$;

Z is O, NH or CH_2 ; and

n is 2, 3 or 4, on the condition that when $\text{X} = \text{NH}_2$ and $\text{Z} = \text{NH}$, Y is not NH.

21. (Twice Amended) A purified peptide consisting of amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:10, wherein X therein is a modified arginine residue with a side chain of the formula:

E5



wherein

X is NH_2 , CH_3 , NHCH_3 or $\text{N}(\text{CH}_3)_2$;

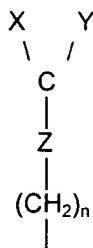
Y is O, NH, NHCH_3 or $\text{N}(\text{CH}_3)_2$;

Z is O, NH or CH_2 ; and

n = 2, 3 or 4, on the condition that when X = NH_3 and Z = NH, Y is not NH.

Add the following new claims:

--25. A cyclic peptide reactive with autoimmune antibodies from a patient suffering from rheumatoid arthritis, wherein the peptide is derived from a contiguous stretch of amino acid residues encoded by mRNA encoding a filaggrin or profilaggrin antigen, the mRNA comprising a codon for at least one arginine residue, wherein at least one arginine residue in the peptide comprises a modified arginine residue with a side chain of the formula:



wherein

X is NH_2 , CH_3 , NHCH_3 or $\text{N}(\text{CH}_3)_2$;

Y is O, NH, NHCH_3 or $\text{N}(\text{CH}_3)_2$;

Z is O, NH or CH_2 ; and

n is 2, 3 or 4, on the condition that when X = NH_3 and Z = NH, Y is not NH.

26. The peptide of claim 25 wherein the peptide is cyclicized through a cystine.

26

27. The peptide of claim 25 wherein the modified arginine residue is a citrulline residue, such that X is NH_2 , Y is O, Z is NH and N is 3.--
